Committee on Resources,

Subcommittee on Energy & Mineral Resources

energy - - Rep. Barbara Cubin, Chairman
U.S. House of Representatives, Washington, D.C. 20515-6208 - - (202) 225-9297

Witness Statement

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Statement of Karl Gawell
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Before the
House Subcommittee on Energy and Mineral Resources
of the
House Resources Committee
U.S. House of Representatives
May 3, 2001

Honorable Chairwoman and Members of the Subcommittee, thank you for the opportunity to present the views of members of the Geothermal Energy Association to this Subcommittee regarding the potential of geothermal energy on public lands and the obstacles to developing this important national energy resource. GEA is the trade association that represents 83 companies and organizations involved in the U.S. geothermal industry, from power plant owners and operators to small drilling and exploration companies.

As you may know, GEA wrote Vice President Cheney last month urging him to include in his upcoming Task Force Report recognition of the problems facing geothermal energy on public lands. This Subcommittee and the Task Force have been told similar stories before not just from the fossil fuel industries, but from the other major renewable industries as well. Both the National Hydropower Association and the biomass industry have testified before the House Resources Committee earlier this year.

Hydropower and biomass are the top two renewable energy producers, and geothermal is the third. For all three, federal land management and regulatory agencies present substantial hurdles to their growth in the United States. Since I work regularly with members of the hydropower and biomass industries, I know that they share our exasperation with what sometimes are literally endless bureaucratic processes.

Geothermal Energy

Geothermal energy provides a significant amount of the energy and electricity consumed in the Western

U.S. Geothermal heat provides energy for direct uses in commercial, industrial and residential settings in 26 states. Geothermal resources provide substantial electricity in California, Nevada, Utah and Hawaii. Expanded use of these resources will provide clean, reliable energy to the West. Thousands of megawatts of new geothermal power, and an equal amount of direct use energy, could be developed in the immediate future; however, obstacles created by public land agencies must be removed.

Beyond its energy contribution, geothermal production contributes directly to state and local economies and to the national Treasury. To date, geothermal electricity producers have paid over $600 million in rentals, bonus bids and royalties to the federal government. Moreover, according to an analysis performed by Princeton Economic Research, it would be reasonable to estimate that the geothermal industry has paid nearly 6 times that amount in federal income tax, for a combined total of over $4 billion.(1) If the economic multiplier effects were considered, the total benefits of geothermal energy to the local and national economy would be substantially greater.

What is the future potential for geothermal energy on public lands? What would the benefits of developing these resources be? These are difficult questions to answer, in part because the federal efforts of the U.S. Geological Survey and the Department of Energy to define the U.S. resource base have not been funded for many years. To be reasonably accurate, for geothermal energy a "resource assessment" would involve not only analysis but also surface exploration, selected drilling and updated modeling. While individual companies have conducted some exploration, much of that data is proprietary and since the collapse of power markets in the early 90s there has been little interest in high-risk investment.

It is my understanding that the USGS and DOE will also testify today, so I will leave a discussion of previous estimates to them. However, I did participate in the workshop sessions that produced the current DOE Strategic Plan - an effort that brought together many of the leading experts from industry, the laboratories, and academia. There was a consensus then that with market support as much as 10,000 MW of electric capacity could be brought on-line in the West by 2010.(2) Assuming that goal could be reached, the Princeton Economic Research study defines some of the direct economic benefits. The cumulative federal royalties from the new geothermal plants would reach over $7 billion by 2050, and estimated income tax revenues would exceed $52 billion in nominal dollars.(3) For just royalties, alone, that would mean an investment of $3.5 billion in schools and local government facilities in the Western states through their share of federal royalties.

But, whether and when the economic benefits of further geothermal development are realized will greatly depend upon the action, or inaction, of the federal land management agencies. Today, about 75% of U.S. geothermal electricity production takes place on Federal public lands because that is where most of the resource is located. We expect that the resources yet to be developed also will be predominantly located on public lands. While the previous Administration espoused development of more geothermal resources in the West through its "GeoPowering the West" initiative, too little was done to address the underlying problems that prevent investment in geothermal projects on public lands.

New geothermal development requires the timely and reasonable administration of federal leasing, permitting, and environmental reviews by public land management agencies. Unfortunately, the recent past has been one characterized by bureaucratic delay and indecision by public land agencies; as a result, there has been a rapid decline in new geothermal energy development. Tens of thousands of acres of geothermal leases have been applied for in the West, but no action has been taken by federal agencies for years. Permit applications that should have taken days or weeks have taken months or years to process. Environmental

reviews have been unnecessarily extensive, costly, and repetitive; and in areas where an EIS has been completed, decisions by federal agencies have been subject to years of delay and appeal.

Modoc and Klamath National Forest Geothermal Development

For the geothermal industry, the events surrounding development in California's Modoc and Klamath National Forests have been a chilling demonstration of why no sensible company would want to do business on public lands.

These National Forests hold one of the largest undeveloped Known Geothermal Resource Areas in the United States. The KGRA was identified shortly after the enactment of the Geothermal Steam Act of 1970. By April 1981, the U.S. Forest Service had completed an environmental assessment for geothermal leasing in the area, and the first competitive lease sale was held in February of 1982. High bids totaling $6.6 million were received for 11 leases. Additional lease sales were held in 1983 and 1988, bringing the total bids received to roughly $12 million.[(4)]

After environmental reviews and some exploratory drilling, Calpine Corporation submitted the first plan of operations for construction of a power plant in 1996. Shortly afterward CalEnergy Corporation submitted its plan of operations for the Telephone Flat Geothermal Development Project.

If both of these projects had gone forward as originally conceived, today there would be 100MW of high reliability power on-line serving the needs of California and the Pacific Northwest. These plants would have been located at a very strategic point in the grid, adding significant reliability benefits. Not only would they have helped reduce the extent of some of the rolling black outs, but they would have saved Californians $10 million or more last year alone, assuming both would have produced at the BPA contract rate.

But instead, neither plant is operating. The Forest Service and BLM have rejected one, and the other languishes in the indeterminate review processes of the Interior Board of Land Appeals (IBLA).

For the Calpine project an extensive Environmental Impact Statement was finalized on September 25, 1998. However, it was not until May 31, 2000 -- eighteen months after issuing the final EIS -- that a Record of Decision was issued to approve the Calpine Project -- and then only after imposing through the ROD some of the most restrictive conditions ever imposed upon an energy project on public lands.

The CalEnergy EIS was issued as a final document on February 25, 1999. Some fifteen months later, also on May 31, 2000, the agencies issued a Record of Decision to pursue the "no action alternative" or, in other words, to reject geothermal development. The Record of Decision states that the agencies found that "cultural and social values" outweigh geothermal's contribution - a conclusion with which we strongly disagree.

But it doesn't end here, with one project approved and one denied. For CalEnergy is seeking compensation through the judicial system for their years of investment and work on the Telephone Flat Project. Instead of reaping royalties and income taxes from power production, the government may be paying millions to CalEnergy for not producing energy.

For Calpine, the saga simply continues. After the ROD was issued, it was appealed to the Interior Board of Land Appeals where, given the backlog of appeals, a decision is expected perhaps sometime next year! Meanwhile, further exploratory drilling was blocked pending a decision on the appeal. Only recently has the

IBLA judge ruled that his stay should not have been interpreted as applying to the exploratory drilling that had already been approved by BLM

Setting aside the substantive issues involved in the denial of the CalEnergy Project, or the onerous mitigation imposed on the Calpine proposal, the years of delay and uncertainty have sent shock waves through the geothermal industry. This area had for decades been proposed for geothermal development. Land use plans and environmental assessments supported geothermal development as an appropriate and publicly beneficial use. Potential development was well recognized, and dozens of different meetings, environmental reviews, and other opportunities for public input preceded any project proposal.

Yet, despite this favorable setting, it has taken nearly twenty years from the first competitive lease sale to reach a decision on the first small power plant project -- and we're still not sure what that decision is. As a result, the lesson most widely learned from the Fourmile Hill example is that a new geothermal project cannot be approved without years of arduous and expensive bureaucratic processing.

This has had a chilling effect on the geothermal industry. If this is what can be expected, few, if any, companies will attempt to develop new geothermal projects on public lands in the West, particularly when they involve joint BLM-Forest Service jurisdiction. Regardless of whatever market or financial incentives may be offered for new clean, power production, they will not be enough to overcome the costs imposed by such an arduous process and potentially decades of delay. It will simply be too much for any private investor to bear.

Recommendations

It is important that the Subcommittee recognize that there are serious problems facing geothermal energy development on the public lands. In many ways, the problems facing natural gas development are mirrored for geothermal development, if not exacerbated by geothermal energy's higher risk and much higher capital costs.

To mitigate these extraordinary delays and costs, we would encourage the federal land management and regulatory agencies to:

- Ensure that the processing of needed, clean energy projects on public lands are handled with a sense of urgency and priority. It is vital that bureaucratic delays be reduced from years to months if not weeks.

- Eliminate repetition and duplication in the process. The Calpine proposal was held up repeatedly while the same issues were examined over and over again by different federal and state agencies.

- Strike a more responsible balance between our need for new, clean energy supplies and other uses and values for the public lands.

- Ensure reasonable access to public lands, including military lands, and lease terms that reflect the public interest in developing geothermal energy resources.

And, while you are moving forward on these programmatic and policy initiatives, please don't forget the Fourmile Hill geothermal project itself. It is still trapped in the federal bureaucracy. Prompt action to set this project on the path to completion would be a welcome signal to all of the geothermal industry that there is a

new, positive direction in public land management.

To those concerned about the alleged impact of geothermal development, let me assure you that while the Medicine Lake Highlands is a beautiful area, this development will not jeopardize its character. To begin with, the area is not "pristine." It is largely second growth timber and there is a wide-ranging network of roads. The development plan approved by the Forest Service requires the company to use the existing roads whenever possible, and as a result less than one-mile of new roadway will be built.

The area also has developed recreational sites, such as Medicine Lake's boat ramp, picnic area, and RV parking spaces. These uses will not be displaced. The power plant will not be visible from the lake, and boaters will not hear it operating since mitigation measures require it to be quieter than the rustling of leaves. It will not impact the quality of the water in the Lake, nor will its presence prevent anyone from using the cultural area as they have in the past.

Regarding cultural conflicts, Calpine should be applauded for its efforts to work cooperatively with Native Americans in the region. Calpine, along with federal and state agencies, has met numerous times with area tribes to address their concerns. In fact, much of the information about their cultural and historic uses comes from a study funded by Calpine. Through the EIS and consultation process, the project has been designed to avoid any impact to known cultural or historical sites and any unexpected discoveries made during construction will be handled strictly in accordance with an agreement reached between Calpine and the Klamath-Modoc Tribe -- the tribe that ceded these lands to the federal government by treaty in the 1800s. Calpine has also agreed to preferential hiring for tribal members from all of the tribes in the area.

The Chairman of the Klamath Tribes has stated on the record, "It is our position that this development is planned in a way that respects both our traditional culture and the surrounding forest. This geothermal development as proposed should benefit our region in many ways."[(5)] For many members of the Klamath-Modoc, Shasta, and Pit River tribes the opportunity for stable, well-paying jobs near their homes is a welcome development of significant benefit for their families and community.

If this project moves forward California and the West will benefit. It will be an important energy contributor; producing about as much electricity annually as the entire solar/photovoltaic industry does today nationwide. [(6)]

Conclusion

The present energy situation in the western U.S. presents an opportunity to increase energy diversity and energy security through the production of clean, indigenous, renewable power. This opportunity must not be squandered by bureaucratic red tape. We urge you to clear the logjam that prevents geothermal from contributing fully to our nation's energy security. The Geothermal Energy Association and its membership would enthusiastically support your efforts to achieve these ends.

Thank you.

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1. Princeton Economic Research, Inc., *Review of Federal Geothermal Royalties and Taxes*, December 15, 1998. (Figures expressed in 1998 dollars.)

2. U.S. Department of Energy, Office of Geothermal Technologies, *Strategic Plan for the Geothermal*

Energy Program, June 1998, page 21.

3. Princeton Energy Research Inc, *Op. Cit.*, Volume I, page 17.

4. U.S. Department of the Interior and U.S. Department of Agriculture, *Telephone Flat Geothermal Development Project Environmental Impact Statement Environmental Impact Report*, Final, February 1999. Pages 1-1 through 1-7 review the history of leasing in the Medicine Lake Highlands.

5. Bonneville Power Administration, *Fourmile Hill Geothermal Development Project*, Power Purchase and Transmission Service Agreements, November 2000, page 15.

6. The Solar Energy Industries Association has estimated that the solar industry today (thermal and photovoltaic) produces 333 billion kWhrs annually. A 49.9MW geothermal power plant producing electricity at a 90% factor would generate 393 billion kWhrs annually.

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